REMARKS

Present Status of the Application

Applicants appreciate that the Office Action considers claim 16 to be allowable.

Claims 1, 2, 3, 6-8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiso et al. (U. S. Patent 6,012,207; hereinafter Ogiso) in view of Lee et al. (U. S. Patent 6,597,085; hereinafter Lee). Claims 4, 5, 9, 10, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiso in view of Lee and further in view of Rosen (U. S. Patent 2,947,296). Applicants have cancel claims 1-5 and 16, added claim 17, and amended claim 6-15. Amendments do not add new matter or raise new issue. After entry of amendments, claims 6-15 and 17 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Claim Rejections under 35 USC 103

1. Claims 1, 2, 3, 6-8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiso in view of Lee. Claims 4, 5, 9, 10, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiso in view of Lee and further in view of Rosen. Applicants have cancel claims 1-5 and 16, added claim 17, and amended claims 6-15. Applicants respectfully traverse the rejections for at least the reasons set for the below.

2. Independent claim 17 is a re-writing of the allowable claim 16 and should be therefore allowed.

3. It should be noted that the present invention has introduced the augmenting surface

electrode 216 (eg. See Fig. 2), which is particularly used in associating with ***the function electrodes 210 having a shape with a contour of at least one acute angle (sharp-angled end 212)***. The augmenting surface electrode can reduce ***the drastically-twisted boundary region 114*** in conventional issue, as shown in FIG. 1 (Prior Art).

Particularly for example in FIG. 13, the augmenting electrode 1316 is placed near the tipped end 1312 of the work piece 130 so as to disperse the accumulation of electrical charges.

In other words, the augmenting surface electrode of the present invention is used to solve the conventional issue caused by the function electrodes 210 with sharp-angled end 212.

4. In re Ogiso (see Fig. 1, Fig. 3, Fig. 4), the function electrodes 22a and 22f are on the surface of the piezoelectric member 21. In addition several electrodes 23a – 23f and 24a – 24f. The electrodes 23a – 23f and 24a – 24f are used to have the desired polarization (col. 5, lines 4-35). Basically, Ogiso is to form different polarization orientation distribution regions within one piezoelectric member. ***The function electrode 12a (see Fig. 2 and Fig. 3) does not have the sharp-angled end as considered and recited in the claimed invention.*** Indeed, the electrode 22a has the straight side ***without*** acute angle in shape (see Fig. 1; electrode 12a). The electrodes 23c, 23e are even inside the piezoelectric member 21, not on the surface of the piezoelectric member 21.

Ogiso never considers the issues mentioned above for solving the issues caused by the function electrodes 210 having a shape with a contour of at least one acute angle in the present invention. As a result in the present invention, the boundary region between different

polarization orientation distribution regions within said piezoelectric workpiece is smoothed.

The Office Action in "*Response to Arguments*" refers to col. 6, lines 66-68 and col. 7. lines 1-10. However, the micro-crack is related to the ***mechanical strength*** (col. 6, line 25) but not used in adjusting the polarization. The second preferred embodiment is to have higher "mean ***breaking*** strength" than the first embodiment (col. 6, lines 66-68 and col. 7, line 1). It is respectfully believed that the Office Action has omitted "***breaking***" intended by Ogiso, and improperly construed the "mean strength". The "***breaking***" is indeed related to the mechanical strength.

In addition, the *electrodes 23a – 23f and 24a – 24f are used to have the intended specific polarization, but not to serve as the claimed augment surface electrode used to disperse the charges at the acute tip.* Ogiso needs several electrodes 23a-23e and 24a-24f, and some (23c, 23e, 24c, and 24e) of the electrodes 23a-23e and 24a-24f are necessary to be distributed inside the piezoelectric member 21. This clearly indicates the different mechanism in use from the present invention.

Thus, Ogiso has considered the different issue and mechanism from the present invention, and then does not disclose the features as discussed above.

6. In re Lee (Abstract), the electrode is designed in modal-shaped actuator to serve as the piezoelectric transducer apparatus for converting the input energy of one form into an output energy of another form. The shape function is specifically used to produce the vibrating in a selected resonant mode (last four lines in Abstract). Therefore, Lee discloses the different issue

from the issue considered by the present invention. The shape should be satisfying the mathematical solution to produce the desired mode. This also implies that the augmenting surface electrode is not included. The augmenting surface electrode may destroy the desired resonant mode. Lee indeed does not disclose the function electrode and the augmenting electrode of the present invention.

Therefore, Lee basically is nonanalogous to Ogiso and the present invention. In addition, even if Lee is used in combination with Ogiso, Lee still does not provide the missing features in Ogiso.

7. For at least the foregoing reasons, Ogiso and Lee either alone on in combination do not disclose the foregoing discussed features of the present invention as recited in independent claim 6, 11 and 17. With at least the same foregoing reasons, claims 7-8 and 12-13 should allowable as well.

8. With respect to dependent claims 4, 5, 9, 10, 14, and 15, the Office Action further cites Rosen in combination with Ogiso. Applicants respectfully traverse the rejections for at least the reasons set forth below.

Claims 4-5 have been canceled.

In response to Point 9 of the Office Action, it should be noted that claims 9-10 and 14-15 are depending on independent claims 6 and 11. When Ogiso in combination with Lee fail to disclose the features recited in independent claims 6 and 11, and Rosen still cannot provide the

missing features in independent claims, then certainly the dependent claims 9-10 and 14-15 including the features in parent claims 6 and 11 are not disclosed by Ogiso in combination with Lee and Rosen.

Further, the electrode 71 in Fig. 8 of Rosen, as referred by the Office Action, is applied to ***peripheral edge*** of the disc (col. 13, lines 25-26) while the other disk-shaped electrode 69 and 70 are on the two surfaces of the transformer (col. 13. lined 20-25). The disk-shaped electrode 69 and 70 do not have acute angle, and the electrode 71 is not on the surface of the transformer. Basically, the electrode 71 is not used to cancel the effect caused by the function electrode with acute angle of the present invention.

9. In response to the Point 10 of the Office Action, independent claims 9 and 11 have recited that the function electrode with the acute angle is connected to the electric circuit. In addition, the augmenting surface electrode is ***proximate to*** the acute angle. This would indicate that the augmenting surface electrode is not physically connected to the electric circuit.

For at least the foregoing reasons, Applicant respectfully submits that independent claims 6, 11 and 17 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 7-10 and 12-15 patently define over the prior art references as well.

Customer No.: 31561
Application No.: 10/709,261
Docket No.: 8905-US-PA-1

CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 6-15 and 17 of the invention patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Date: Dec. 29, 2005

Respectfully submitted,

Belinda Lee

Belinda Lee
Registration No.: 46,863

Jianq Chyun Intellectual Property Office
7th Floor-1, No. 100
Roosevelt Road, Section 2
Taipei, 100
Taiwan
Tel: 011-886-2-2369-2800
Fax: 011-886-2-2369-7233
Email: belinda@jcipgroup.com.tw ;
usa@jcipgroup.com.tw